

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.-3. (Canceled)

4. (Currently Amended) A semiconductor device comprising:

an active layer, to which nitrogen and hydrogen are added, and which is made of a semiconductor containing (i) polycrystalline ZnO or polycrystalline $Mg_xZn_{1-x}O$, (ii) amorphous ZnO or amorphous $Mg_xZn_{1-x}O$, or (iii) either (a) mixture of the polycrystalline ZnO and the amorphous ZnO or (b) mixture of the polycrystalline $Mg_xZn_{1-x}O$ and the amorphous $Mg_xZn_{1-x}O$; and

a blocking member for blocking the active layer from an atmosphere such that the atmosphere substantially does not influence a region, in which a movable charge moves, of the active layer, wherein

said nitrogen and hydrogen are intentionally added to the active layer ~~so that to control a~~
and a threshold voltage of the semiconductor device is restrained to be ~~on the order of about~~ 0 V.

5. (Previously Presented) A method for manufacturing the semiconductor device as set forth in claim 4, comprising the step of:

forming the active layer under an atmosphere containing (i) one or more of nitrogen monoxide and nitrogen dioxide, and (ii) hydrogen peroxide.

6. (Previously Presented) The semiconductor device as set forth in claim 4, wherein:

the blocking member is made up of different blocking layers.

7. (Original) The semiconductor device as set forth in claim 6, wherein:

at least one of the blocking layers is made of SiO_2 , Al_2O_3 , AlN , MgO , Ta_2O_5 , TiO_2 , ZrO_2 , stab-ZrO_2 , CeO_2 , K_2O , Li_2O , Na_2O , Rb_2O , In_2O_3 , La_2O_3 , Sc_2O_3 , Y_2O_3 , KNbO_3 , KTaO_3 , BaTiO_3 , CaSnO_3 , CaZrO_3 , CdSnO_3 , SrHfO_3 , SrSnO_3 , SrTiO_3 , YScO_3 , CaHfO_3 , MgCeO_3 , SrCeO_3 , BaCeO_3 , SrZrO_3 , BaZrO_3 , LiGaO_2 , a mixed crystal of LiGaO_2 such as $(\text{Li}_{1-(x+y)}\text{Na}_x\text{K}_y)(\text{Ga}_{1-z}\text{Al}_z)\text{O}_2$, or a solid solution containing at least two of them.

8. (Original) The semiconductor device as set forth in claim 7, wherein:

a blocking layer constituting the blocking layers is made of SiO_2 , Al_2O_3 , AlN , MgO , Ta_2O_5 , TiO_2 , ZrO_2 , stab-ZrO_2 , CeO_2 , K_2O , Li_2O , Na_2O , Rb_2O , In_2O_3 , La_2O_3 , Sc_2O_3 , Y_2O_3 , KNbO_3 , KTaO_3 , BaTiO_3 , CaSnO_3 , CaZrO_3 , CdSnO_3 , SrHfO_3 , SrSnO_3 , SrTiO_3 , YScO_3 , CaHfO_3 , MgCeO_3 , SrCeO_3 , BaCeO_3 , SrZrO_3 , BaZrO_3 , LiGaO_2 , a mixed crystal of LiGaO_2 such as $(\text{Li}_{1-(x+y)}\text{Na}_x\text{K}_y)(\text{Ga}_{1-z}\text{Al}_z)\text{O}_2$, or a solid solution containing at least two of them, and

said blocking layer is so provided as to meet the active layer separately from (i) each of two electrodes serving as blocking layers and connected to the active layer, and (ii) an insulating layer, which serves as a blocking layer and meets the active layer, for insulating the active layer from a control electrode for controlling move of a movable electric charge in the active layer.

9. (Original) The semiconductor device as set forth in claim 6, wherein:

at least one of the blocking layers is made of resin.

10. (Original) The semiconductor device as set forth in claim 9, wherein:
a blocking layer constituting the blocking layers is made of resin, and
said blocking layer is so provided as to meet the active layer separately from (i) each of two electrodes serving as blocking layers and connected to the active layer, and (ii) an insulating layer, which serves as a blocking layer and meets the active layer, for insulating the active layer from a control electrode for controlling move of a movable electric charge in the active layer.

11. (Original) The semiconductor device as set forth in claim 6, further comprising:
a gate electrode for controlling move of a movable electric charge in the active layer;
a gate insulating layer, which serves as a block layer, for insulating the active layer from the gate electrode;

a source electrode connected to the active layer; and

a drain electrode connected to the active layer,

wherein:

at least one of the blocking layers is made of SiO_2 , Al_2O_3 , AlN , MgO , Ta_2O_5 , TiO_2 , ZrO_2 , stab-ZrO_2 , CeO_2 , K_2O , Li_2O , Na_2O , Rb_2O , In_2O_3 , La_2O_3 , Sc_2O_3 , Y_2O_3 , KNbO_3 , KTaO_3 , BaTiO_3 , CaSnO_3 , CaZrO_3 , CdSnO_3 , SrHfO_3 , SrSnO_3 , SrTiO_3 , YScO_3 , CaHfO_3 , MgCeO_3 , SrCeO_3 , BaCeO_3 , SrZrO_3 , BaZrO_3 , LiGaO_2 , a mixed crystal of LiGaO_2 such as $(\text{Li}_{1-x+y}\text{Na}_x\text{K}_y)(\text{Ga}_{1-z}\text{Al}_z)\text{O}_2$, or a solid solution containing at least two of them.

12. (Original) The semiconductor device as set forth in claim 11, wherein:
a blocking layer constituting the blocking layers is made of SiO_2 , Al_2O_3 , AlN , MgO , Ta_2O_5 , TiO_2 , ZrO_2 , stab-ZrO_2 , CeO_2 , K_2O , Li_2O , Na_2O , Rb_2O , In_2O_3 , La_2O_3 , Sc_2O_3 , Y_2O_3 ,

KNbO₃, KTaO₃, BaTiO₃, CaSnO₃, CaZrO₃, CdSnO₃, SrHfO₃, SrSnO₃, SrTiO₃, YScO₃, CaHfO₃, MgCeO₃, SrCeO₃, BaCeO₃, SrZrO₃, BaZrO₃, LiGaO₂, a mixed crystal of LiGaO₂ such as (Li_{1-(x+y)}Na_xK_y)(Ga_{1-z}Al_z)O₂, or a solid solution containing at least two of them, and

said blocking layer is so provided as to meet the active layer separately from the source electrode, the drain electrode, and the gate insulating layer, each of which serves as a blocking layer.

13. (Original) The semiconductor device as set forth in claim 6, further comprising:
a gate electrode for controlling move of a movable electric charge in the active layer;
a gate insulating layer, which serves as a block layer, for insulating the active layer from the gate electrode;
a source electrode connected to the active layer; and
a drain electrode connected to the active layer,
wherein:
at least one of the blocking layers is made of a resin.

14. (Previously Presented) The semiconductor device as set forth in claim 13,
wherein:

a blocking layer constituting the blocking layers is made of a resin, and
said blocking layer is so provided as to meet the active layer separately from the source electrode, the drain electrode, and the gate insulating layer, each of which serves as a blocking layer.

15. (Previously Presented) An electronic device, comprising, as a switching element, the semiconductor device as set forth in claim 4.

16. (Original) The electronic device as set forth in claim 15, wherein:
the switching element is connected to a picture element electrode such that an image signal is written in or read out from the picture element electrode.

17. (Original) An electronic device, comprising, as a switching element, the semiconductor device as set forth in claim 6.

18. (Original) The electronic device as set forth in claim 17, wherein:
the switching element is connected to a picture element electrode such that an image signal is written in or read out from the picture element electrode.

19. (Original) An electronic device, comprising, as a switching element, the semiconductor device as set forth in claim 7.

20. (Original) The electronic device as set forth in claim 19, wherein:
the switching element is connected to a picture element electrode such that an image signal is written in or read out from the picture element electrode.

21. (Original) An electronic device, comprising, as a switching element, the semiconductor device as set forth in claim 8.

22. (Original) The electronic device as set forth in claim 21, wherein:
the switching element is connected to a picture element electrode such that an image signal is written in or read out from the picture element electrode.

23. (Original) An electronic device, comprising, as a switching element, the semiconductor device as set forth in claim 9.

24. (Original) The electronic device as set forth in claim 23, wherein:
the switching element is connected to a picture element electrode such that an image signal is written in or read out from the picture element electrode.

25. (Original) An electronic device, comprising, as a switching element, the semiconductor device as set forth in claim 10.

26. (Original) The electronic device as set forth in claim 25, wherein:
the switching element is connected to a picture element electrode such that an image signal is written in or read out from the picture element electrode.

27. (Original) An electronic device, comprising, as a switching element, the semiconductor device as set forth in claim 11.

28. (Original) The electronic device as set forth in claim 27, wherein:

the switching element is connected to a picture element electrode such that an image signal is written in or read out from the picture element electrode.

29. (Original) An electronic device, comprising, as a switching element, the semiconductor device as set forth in claim 12.

30. (Original) The electronic device as set forth in claim 29, wherein:
the switching element is connected to a picture element electrode such that an image signal is written in or read out from the picture element electrode.

31. (Original) An electronic device, comprising, as a switching element, the semiconductor device as set forth in claim 13.

32. (Original) The electronic device as set forth in claim 31, wherein:
the switching element is connected to a picture element electrode such that an image signal is written in or read out from the picture element electrode.

33. (Original) An electronic device, comprising, as a switching element, the semiconductor device as set forth in claim 14.

34. (Original) The electronic device as set forth in claim 33, wherein:
the switching element is connected to a picture element electrode such that an image signal is written in or read out from the picture element electrode.